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EXAMINER

WEINSTEIN, LEONARD J

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

1. This office action is in response to the amendment of June 16, 2008. In making the below rejections and/or objections the examiner has considered and addressed each of the applicant's arguments.

2. The examiner acknowledges the amendments to claims 1 and 9-10.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dreiman et al. US 6,135,727, with reference to like parts in Gannaway US 4,834,627, in view of Hatz,Jr. et al. US 3,164,423. Dreiman teaches all the limitations as claimed for a hermetic compressor including: **[claim 1]** an electric driving element, elements 34 and 38, a compressing element 50 driven by the electric driving element, elements 34 and 38, and a closed vessel, as defined by elements 22 and 24, for

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housing the electric driving element, elements 34 and 38, and the compressing element 50, wherein the compressing element 50 comprises, a shaft 42 having an eccentric shaft portion 82, a spindle portion 92 provided at a bottom surface of the eccentric shaft portion 82 and an auxiliary shaft portion, portion of element 42 received by elements 70 and 80, provided at a top surface of the eccentric shaft portion 82 so as to be coaxial with the spindle portion 92, a cylinder block, defined by elements 44 and 76, provided with a compression chamber 66, a main bearing 68 provided on the cylinder block, defined by elements 44 and 76, so as to support the spindle portion 92, an auxiliary bearing 70 provided on the cylinder block, element 76 of elements 44 and 76, so as to support the auxiliary shaft portion, portion of element 42 received by elements 70 and 80, a piston 56 reciprocating in the compression chamber 66, and a connecting member 53 for connecting the piston 56 and the eccentric shaft portion 82, wherein a first balance weight 110 is provided at a top end of the eccentric shaft portion 82, wherein a second balance weight 92a is provided on the spindle portion 92 at a bottom end of the eccentric shaft portion 82, and wherein the first balance weight 106 is coupled to the auxiliary shaft portion, portion of element 42 received by elements 70 and 80, by a separate member 106 via element 96. Dreiman teaches a first balance weight that is composed of an insert portion 110 and a base portion 108 that attached to the auxiliary portion of shaft 42, which is the portion for element 42 received by elements 70 and 80, via shaft section 96; **[claim 7]** and a main bearing 60 is coupled with the cylinder block, element 44 and 76, by a fastening member, bolt element as shown in figure 1 disposed below element 92a..

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Dreiman also teaches a third counter weight 10 that is attached to an auxiliary portion of the crank shaft 42. The third counter weight 10 is the same as the counter weight of Gannaway as defined by element 190 as shown in figure 1. With reference to numerals in Gannaway, both Dreiman and Gannaway teach **[claim 1]** a counter weight 190 (corresponding to "third" balance weight of Dreiman defined by element 10) coupled to an auxiliary shaft portion 84 by a separate member 192 having a head portion and a base portion (head and bottom end of bolt element 192, as is clear from figure 1 in Gannaway), the diameter of the base portion (bottom end of bolt 192) being smaller than the diameter of the head portion (head of bolt 192), the auxiliary shaft portion 84 being provided with a hole through which the base portion (bottom end of bolt 192) passes, the separate member 192 being arranged between the balance weight 190 ("third" balance weight of Dreiman defined by element 10) and the auxiliary shaft portion 84; **[claim 2]** and wherein a separate member 192 is a screw, as shown in figure 1, and wherein the auxiliary shaft portion 94 and the balance weight 190 ("third" balance weight of Dreiman defined by element 10) are coupled to each other by the screw 192 so as to be fixed.

Dreiman (or Gannaway) does not teach a base portion of a separate member, fixed in contact with the balance weight, and the head portion in contact with the auxiliary shaft portion, since element 10 of Dreiman does not correspond to applicant's first counter weight, which is equivalent to element 110 in Dreiman. A modification to Dreiman satisfying the limitations would include a continuation of bore that accommodates the bolt which fastens element 10 to element 42. The bore would be

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modified to continue to the bottom of the auxiliary shaft portion that is defined by the section of element 42 received by elements 70 and 80. The modification would further include make the same size bore in counter 110 in a location just below the bore when the counterweight is attached via base 108 and shaft section 96. This modification would eliminate the need for both the base portion 108 and the flat surfaces formed on the outer perimeter of shaft section 96. Hatz Jr. et al teaches an arrangement for a compressor that includes a bore 1a' traversing the entire upper section (7a) of a crankshaft 7 to accommodate a bolt 6 that fastens a fillet 5 to the crankshaft. The fillet is used to fix a rod 2 in place on the eccentric section (7b, 7bb) of the crankshaft 7.

The arrangement taught by Hatz is analogous to the proposed modification to Dreiman which would eliminate the need for base component element 108. A further advantage of this modification would be that a user could change the location of the first balance weight along the crankshaft by changing the counterweight or, similar to Hatz, using a fillet between the bottom of the auxiliary shaft and the counterweight currently a component of the compressor assembly. Either change to the compressor could be accomplished without undue modification or disassembly of the compressor. Dreiman teaches that an objective of the instant reference is provide an improved means for attaching counterweight to a crankshaft where access for assembly is restricted (Dreiman – col. 1 ll. 65- col. 2 ll. 3). The proposed modification would allow a user to attach a counterweight to a crankshaft using a single bolt (support found in Hatz – col. 1 ll. 51-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made modify a compressor assembly with a pair of counterweights

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located on opposite axial sides of the eccentric of crankshaft, as taught by Dreiman, by continuing a bore hole through an auxiliary section of the crankshaft, as taught by Hatz, disposed directly above or below one of the counterweights and providing a threaded bore in one of the counterweights, similar to the fillet taught by Hatz, to receive a fastening screw, in order to reduce the number of components in the compressor assembly while providing improved access for assembly and modification (support found at (Dreiman – col. 1 ll. 65- col. 2 ll. 3 and Hatz – col. 1 ll. 51-60)).

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dreiman et al. 6,135,727, with reference to like parts in Gannaway US 4,834,627, in view of Hatz, Jr. et al. US 3,164,423. Dreiman teaches all the limitations as discussed but fails to teach the limitation of a rivet being a separate member for coupling a first balance weight to an auxiliary shaft portion. With regards to the limitation of a rivet for coupling elements of the compressor as discussed, the examiner takes official notice. The limitation of a rivet connecting two elements capable of being connected in the alternative by the use of screws, is well-known means of fastening components together and is considered to be common knowledge in the art, and further is capable of instant and unquestionable demonstration as being well-known.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dreiman et al. US 6,135,727, with reference to like parts in Gannaway US 4,834,627, in view of Hatz, Jr. et al. US 3,164,423, as applied to claim 1 above. Dreiman teaches all the limitations as discussed including an auxiliary shaft portion 96, a sliding portion 80 within an auxiliary bearing 70, and a hole 138 through which a screw passes 142 and

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discloses the general conditions of the claimed invention except for the express disclosure of a distance of no less than $1/2$ of a diameter of a hole between a top end of the sliding portion and a top end of a auxiliary shaft portion, and a distance of no less than $1/2$ of a diameter of a hole between a bottom end of the sliding portion and a bottom end of the auxiliary shaft portion. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a top and bottom end of a sliding portion at a predetermined distance from a top and bottom end of an auxiliary shaft portion, since the claimed values are merely an optimum or workable range. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dreiman et al. US 6,135,727, with reference to like parts in Gannaway US 4,834,627, in view of Hatz,Jr. et al. US 3,164,423, as applied to claim 3 above. As discussed Dreiman teaches all the limitations including an auxiliary shaft portion 96, a sliding portion 80 within an auxiliary bearing 70, and a hole 138 through which a fastener means passes 142 and discloses the general conditions of the claimed invention except for the express disclosure of a distance of no less than $1/2$ of a diameter of a hole between a top end of the sliding portion and a top end of a auxiliary shaft portion, and a distance of no less than $1/2$ of a diameter of a hole between a bottom end of the sliding portion and a bottom end of the auxiliary shaft portion. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a top and bottom

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end of a sliding portion at a predetermined distance from a top and bottom end of an auxiliary shaft portion, since the claimed values are merely an optimum or workable range. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Allowable Subject Matter

9. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

10. Applicant's arguments with respect to claims 1-4, 7, and 9-10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEONARD J. WEINSTEIN whose telephone number is (571)272-9961. The examiner can normally be reached on Monday - Thursday 7:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746

/Leonard J Weinstein/

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Examiner, Art Unit 3746